FIG. 1

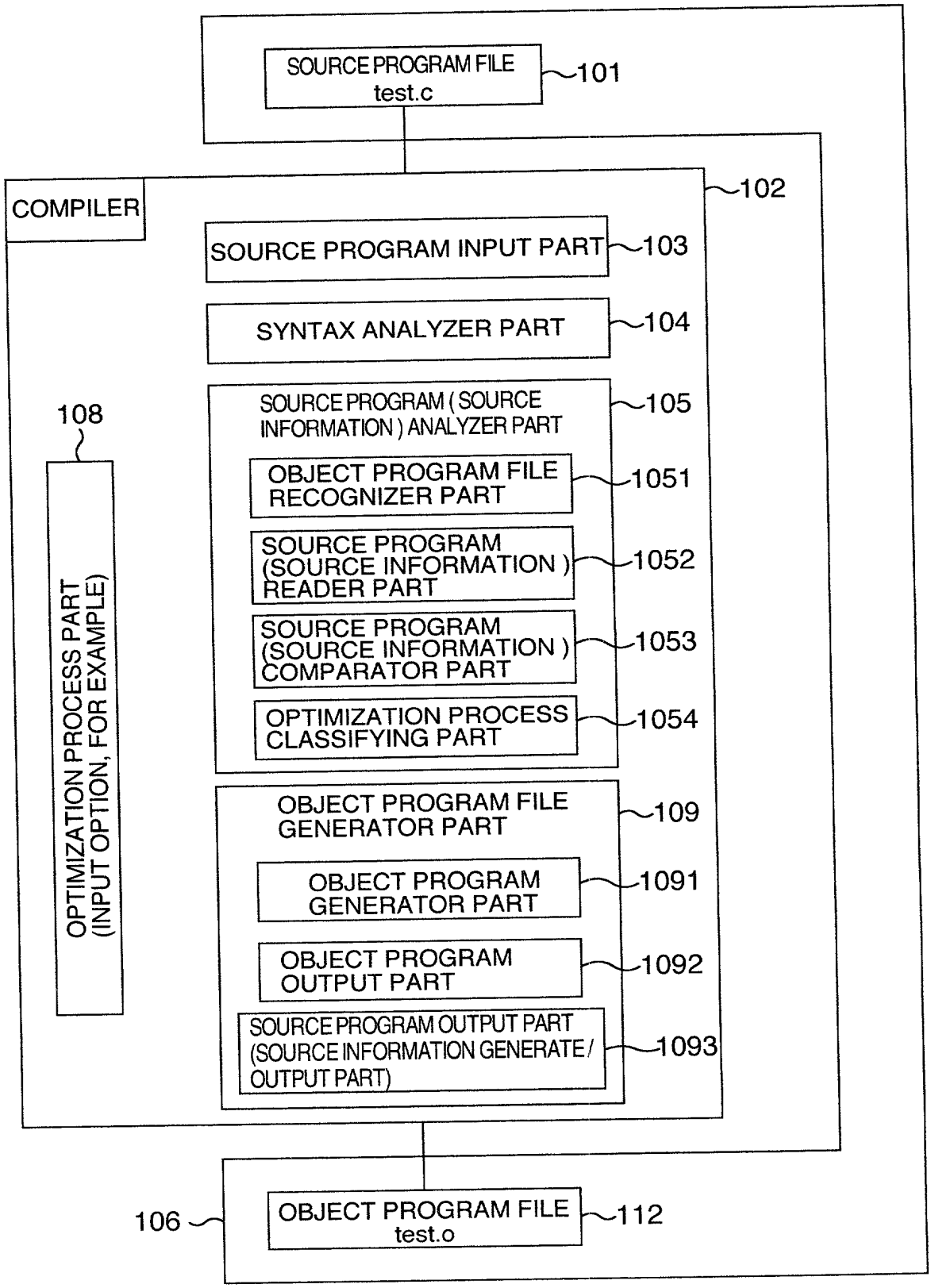

SOURCE PROGRAM FILE
test.c
101
COMPILER
102
SOURCE PROGRAM INPUT PART
103
SYNTAX ANALYZER PART
104
SOURCE PROGRAM (SOURCE INFORMATION) ANALYZER PART
105
OBJECT PROGRAM FILE RECOGNIZER PART
1051
SOURCE PROGRAM (SOURCE INFORMATION) READER PART
1052
SOURCE PROGRAM (SOURCE INFORMATION) COMPARATOR PART
1053
OPTIMIZATION PROCESS CLASSIFYING PART
1054
108
OPTIMIZATION PROCESS PART (INPUT OPTION, FOR EXAMPLE)
OBJECT PROGRAM FILE GENERATOR PART
109
OBJECT PROGRAM GENERATOR PART
1091
OBJECT PROGRAM OUTPUT PART
1092
SOURCE PROGRAM OUTPUT PART (SOURCE INFORMATION GENERATE / OUTPUT PART)
1093
106
OBJECT PROGRAM FILE
test.o
112

FIG. 2

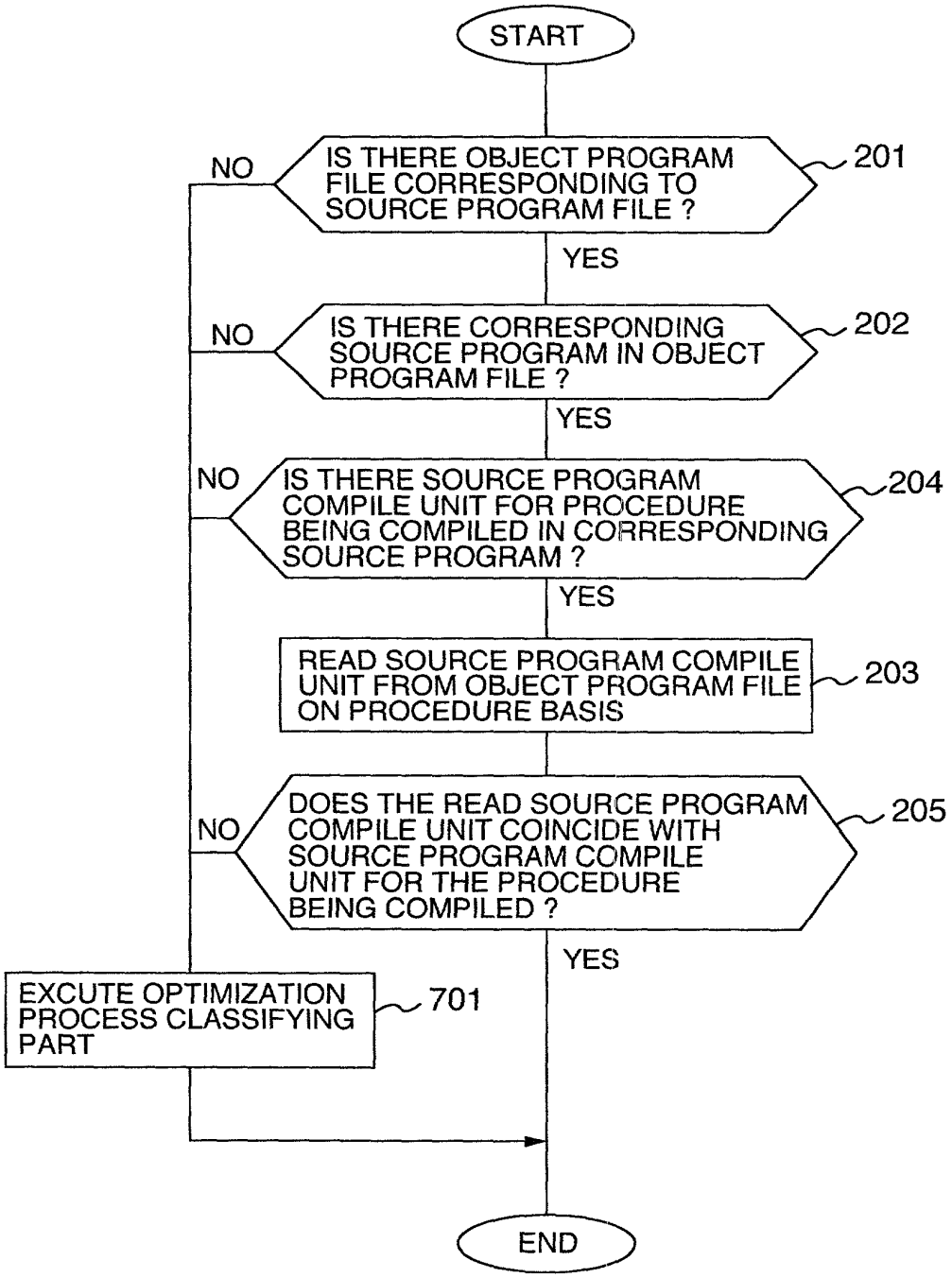

START
IS THERE OBJECT PROGRAM FILE CORRESPONDING TO SOURCE PROGRAM FILE ?
201
NO
YES
IS THERE CORRESPONDING SOURCE PROGRAM IN OBJECT PROGRAM FILE ?
202
NO
YES
IS THERE SOURCE PROGRAM COMPILE UNIT FOR PROCEDURE BEING COMPILED IN CORRESPONDING SOURCE PROGRAM ?
204
NO
YES
READ SOURCE PROGRAM COMPILE UNIT FROM OBJECT PROGRAM FILE ON PROCEDURE BASIS
203
DOES THE READ SOURCE PROGRAM COMPILE UNIT COINCIDE WITH SOURCE PROGRAM COMPILE UNIT FOR THE PROCEDURE BEING COMPILED ?
205
NO
YES
EXCUTE OPTIMIZATION PROCESS CLASSIFYING PART
701
END

FIG. 3

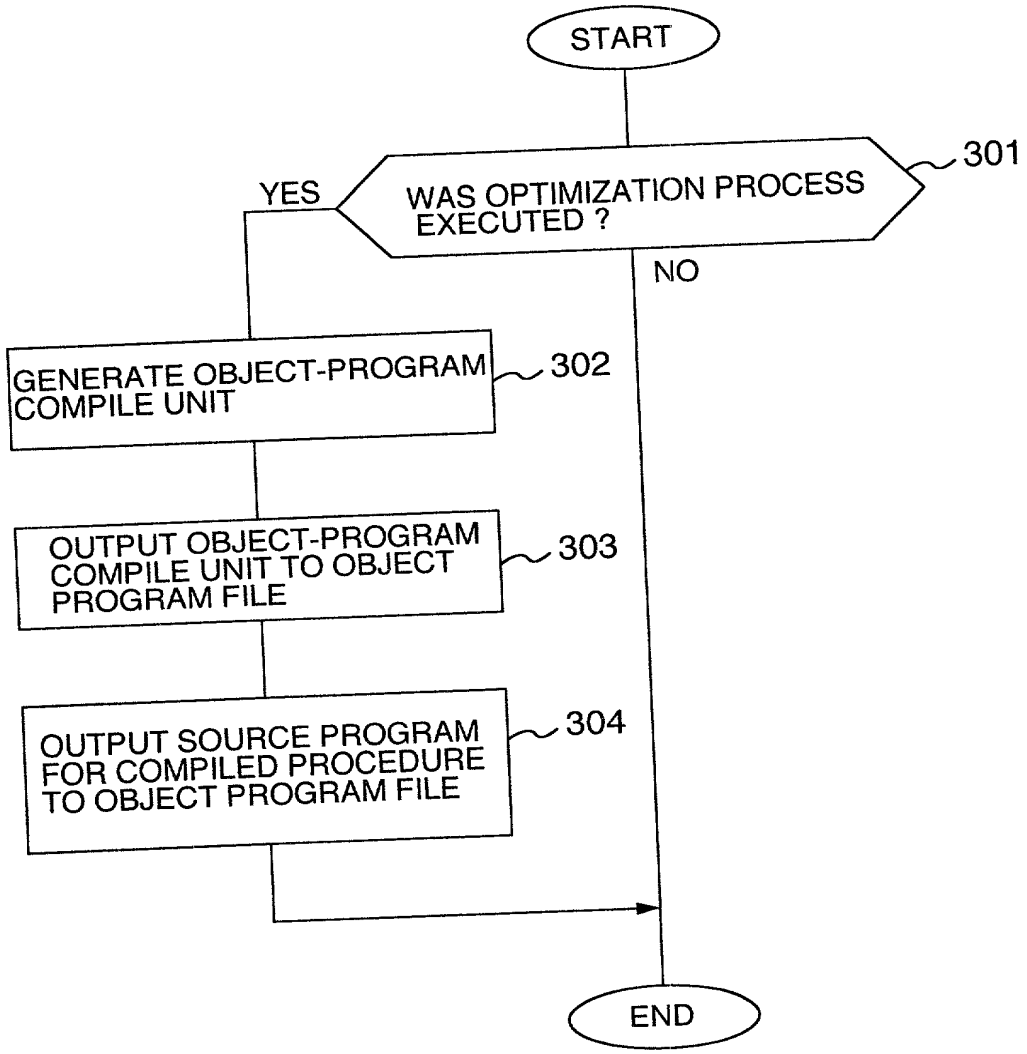

START
WAS OPTIMIZATION PROCESS EXECUTED ?
301
YES
NO
GENERATE OBJECT-PROGRAM COMPILE UNIT
302
OUTPUT OBJECT-PROGRAM COMPILE UNIT TO OBJECT PROGRAM FILE
303
OUTPUT SOURCE PROGRAM FOR COMPILED PROCEDURE TO OBJECT PROGRAM FILE
304
END

FIG. 4

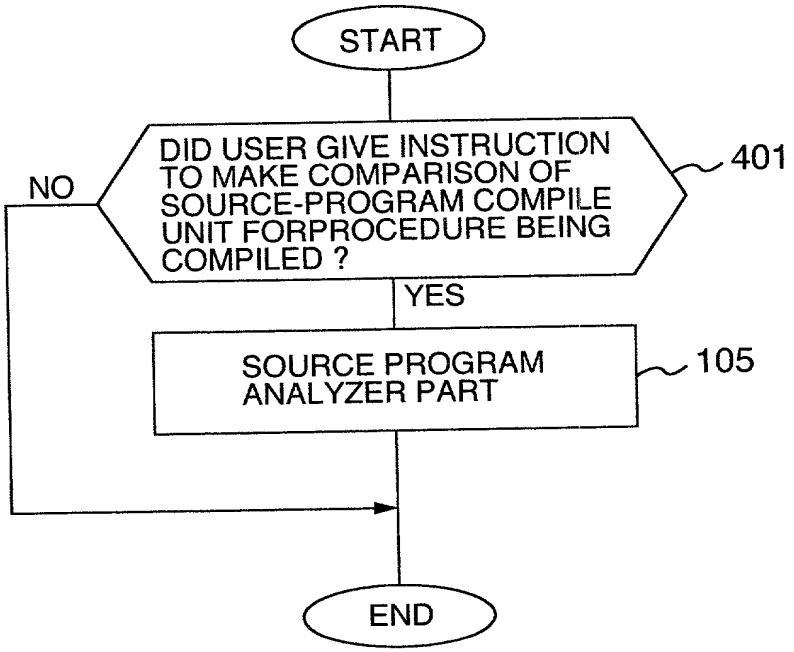

START
DID USER GIVE INSTRUCTION TO MAKE COMPARISON OF SOURCE-PROGRAM COMPILE UNIT FORPROCEDURE BEING COMPILED ?
401
NO
YES
SOURCE PROGRAM ANALYZER PART
105
END

FIG. 5

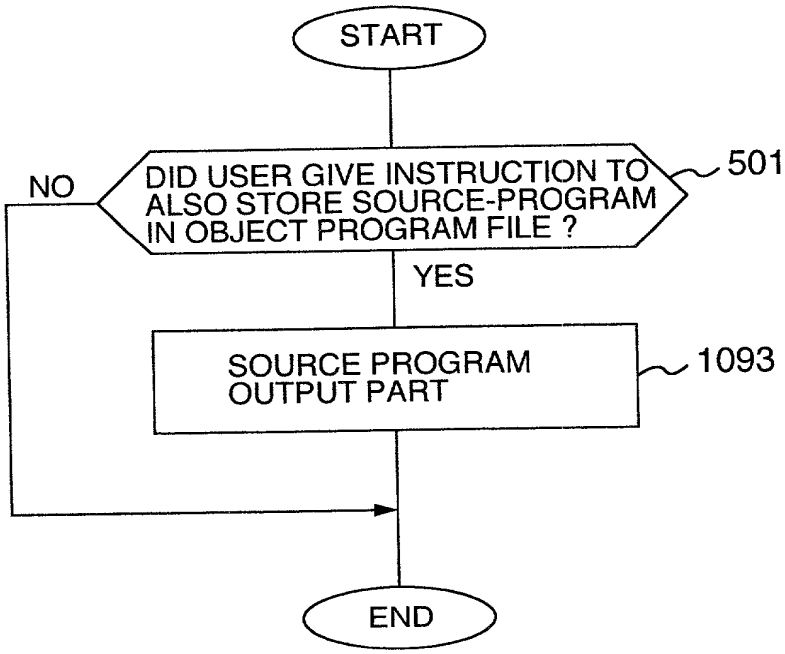

START
DID USER GIVE INSTRUCTION TO ALSO STORE SOURCE-PROGRAM IN OBJECT PROGRAM FILE ?
501
NO
YES
SOURCE PROGRAM OUTPUT PART
1093
END

FIG. 6

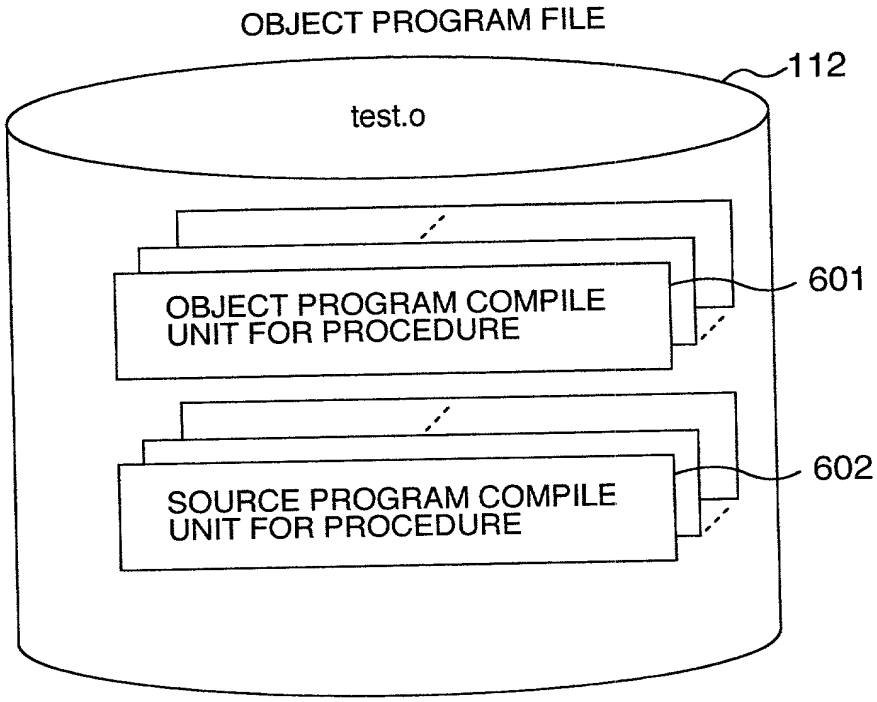


FIG. 7

SOURCE PROGRAM FILE
test.c

101

```
func1 () {
  int  i;
  i=100;
  printf ("%d¥n", i);
}
func2 () {
  int  j;
  j=50;
  printf ("$d¥n", j);
}
```

FIG. 8

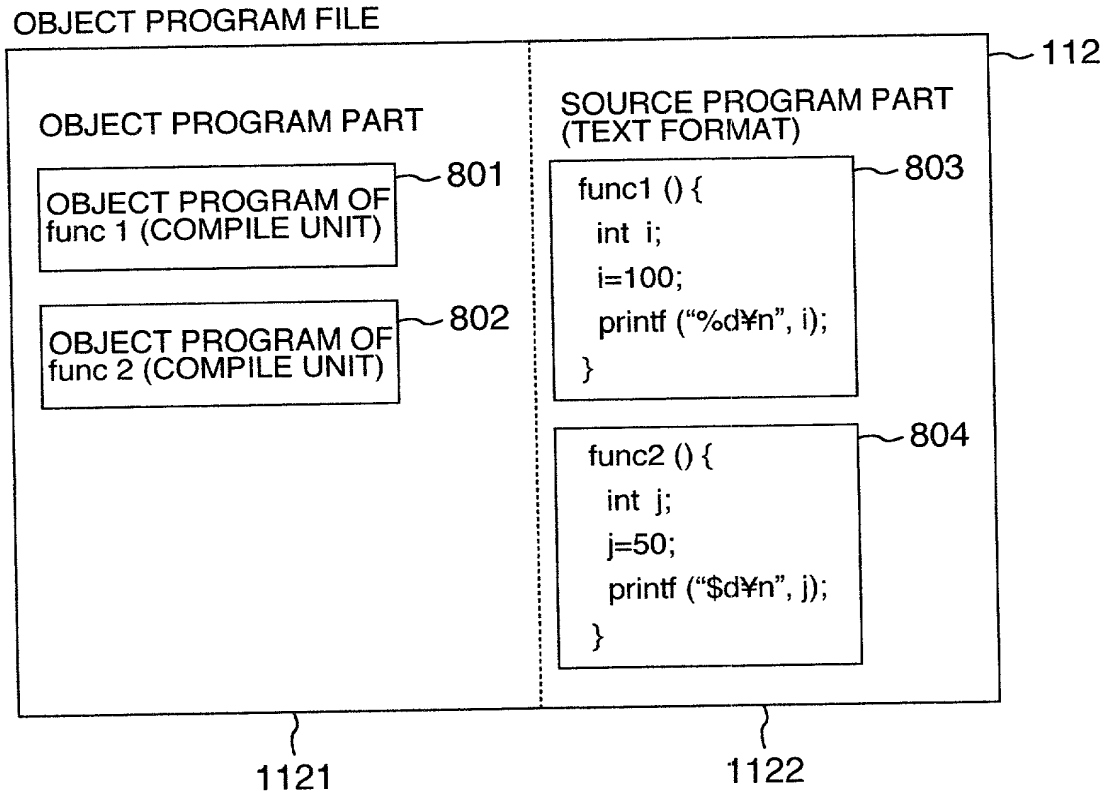
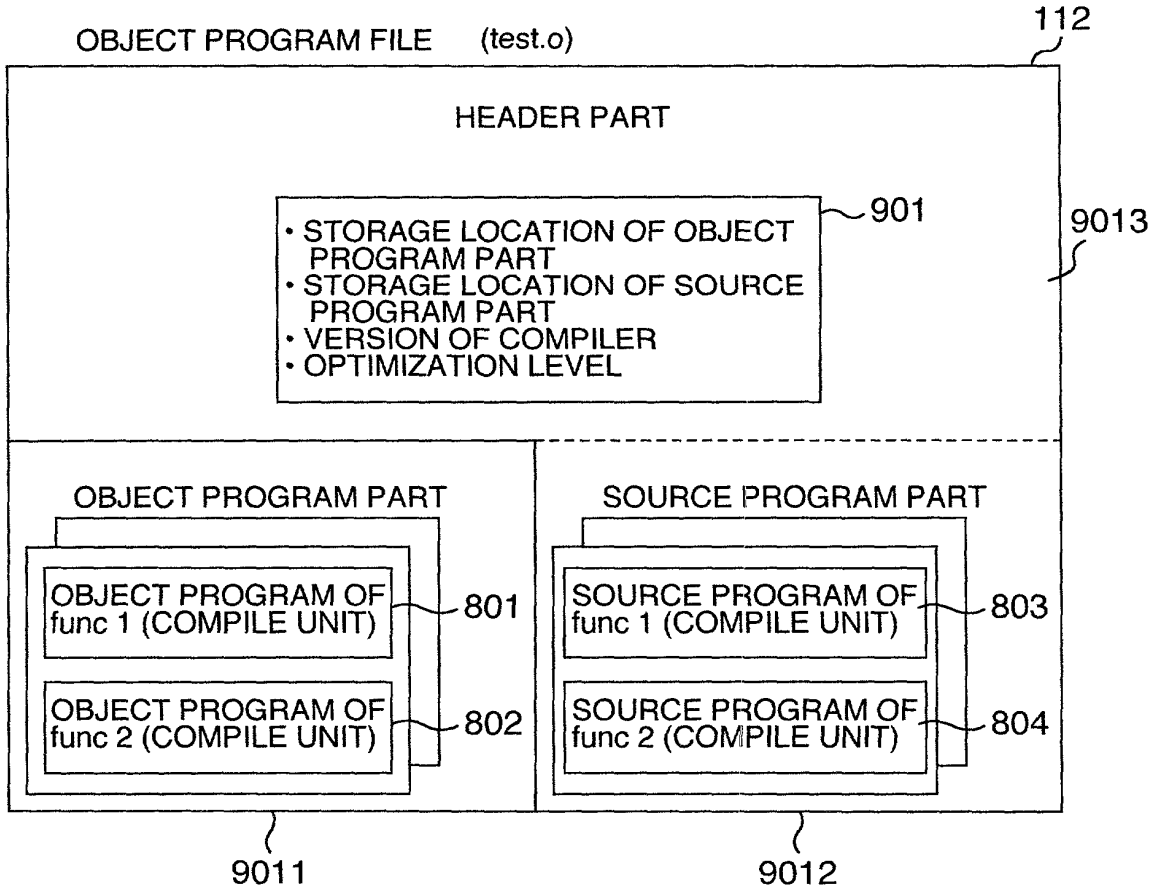

OBJECT PROGRAM FILE
112
OBJECT PROGRAM PART
SOURCE PROGRAM PART
(TEXT FORMAT)
OBJECT PROGRAM OF
func 1 (COMPILE UNIT)
801
OBJECT PROGRAM OF
func 2 (COMPILE UNIT)
802
func1 () {
int i;
i=100;
printf ("%d¥n", i);
}
803
func2 () {
int j;
j=50;
printf ("$d¥n", j);
}
804
1121
1122

FIG. 9


OBJECT PROGRAM FILE (test.o)
112
HEADER PART
• STORAGE LOCATION OF OBJECT PROGRAM PART
• STORAGE LOCATION OF SOURCE PROGRAM PART
• VERSION OF COMPILER
• OPTIMIZATION LEVEL
901
9013
OBJECT PROGRAM PART
OBJECT PROGRAM OF func 1 (COMPILE UNIT)
801
OBJECT PROGRAM OF func 2 (COMPILE UNIT)
802
SOURCE PROGRAM PART
SOURCE PROGRAM OF func 1 (COMPILE UNIT)
803
SOURCE PROGRAM OF func 2 (COMPILE UNIT)
804
9011
9012